AMENDMENTS TO THE CLAIMS

1. (Currently amended): A method in a data processing system for maintaining a database of usage information of a plurality of physical devices, said method comprising the steps of:

providing a virtualization system interposed between a host computer system and a plurality of physical devices, wherein said host computer system is capable of accessing virtual interfaces and is incapable of directly accessing any of said plurality of physical devices;

establishing a database within said virtualization system for storing information; [[and]]

storing, within said database, information about transactions processed by said virtualization system utilizing said plurality of physical devices[[.]];

detecting an error in one of said plurality of physical devices occurring during processing of one of a plurality of transactions;

identifying said one of said plurality of physical devices having said error;

identifying said one of said plurality of transactions associated with said error; and

storing information about said error including said identification of said one of plurality of transactions and said identification of said one of said plurality of physical devices in said database.

2. (Original): The method according to claim 1, further comprising the step of accessing, utilizing said host computer system, said database.

3. (Original): The method according to claim 2, further comprising the step of utilizing said database by said host computer system to analyze performance of said plurality of physical devices.

4. (Original): The method according claim 1, further comprising the steps of:
detecting an error in one of said plurality of physical devices; and
storing information about said error in said database.

5. (Original): The method according to claim 1, further comprising the step of
storing, within said database, information about a usage of each one of said plurality of
storage devices.

6. (Original): The method according to claim 1, further comprising the step of for
each one of said plurality of physical devices, maintaining a separate history within said
database of usage of each one of said plurality of storage devices.

7. (Canceled)

8. (Currently amended): The method according to claim 1 [[7]], further comprising
the step of storing said information about said error in said database with an entry
associated with said one of said identified one of said plurality of physical devices.

9. (Original): The method according to claim 1, further comprising the steps of:
processing, within said virtualization system, a transaction between said host
computer system and a first virtual interface by translating said first virtual interface to
one of said plurality of physical devices associated with said first virtual interface; and
storing, in said database, information about said transaction.

10. (Original): The method according to claim 9, further comprising the steps of:
maintaining a separate history within said database of usage of each one of said
plurality of physical devices; and
storing said information in a history associated with said one of said plurality of
physical devices.

11.   (Original): The method according to claim 9, further comprising the step of monitoring, utilizing said virtualization system, said transaction.

12.   (Original): The method according to claim 9, further comprising the steps of:
collecting, utilizing said virtualization system, an identification of said first virtual interface; and
storing said identification of said first virtual interface in said entry associated with said transaction.

13.   (Original): The method according to claim 9, further comprising the steps of:
collecting, utilizing said virtualization system, an identification of said one of said plurality of physical devices associated with said first virtual interface; and
storing said identification of said one of said plurality of physical devices in said entry associated with said transaction.

14.   (Original): The method according to claim 9, further comprising the steps of:
collecting, utilizing said virtualization system, an identification of a physical device utilized during said transaction; and
storing said identification of said physical device in said entry associated with said transaction.

15.   (Original): The method according to claim 14, wherein the step of collecting an identification of a physical device further comprises the step of collecting an identification of a particular tape cartridge.

16.   (Original): The method according to claim 14, wherein the step of collecting an identification of a physical device further comprises the step of collecting an identification of a particular hub.

17. (Original): The method according to claim 14, wherein the step of collecting an identification of a physical device further comprises the step of collecting an identification of a particular switch.

18. (Original): The method according to claim 14, wherein the step of collecting an identification of a physical device further comprises the step of collecting an identification of a particular tape drive.

19. (Original): The method according to claim 9, further comprising the steps of:
collecting, utilizing said virtualization system, information about a data transfer executed during said transaction; and
storing said information about said data transfer in said database.

20. (Original): The method according to claim 19, wherein the step of collecting information about a data transfer further comprises the step of collecting information about a date of said data transfer.

21. (Original): The method according to claim 19, wherein the step of collecting information about a data transfer further comprises the step of collecting information about a time of day of said data transfer.

22. (Original): The method according to claim 19, wherein the step of collecting information about a data transfer further comprises the step of collecting information about a duration of said data transfer.

23. (Original): The method according to claim 1, further comprising the step of storing, within said database, information about errors in said plurality of physical devices occurring during said transactions.

24. (Original): The method according to claim 1, wherein said virtual interfaces are virtual storage devices.

25.   (Original): The method according to claim 1, wherein said virtual interfaces are virtual libraries.

26.   (Original): The method according to claim 1, wherein said virtual interfaces are virtual volumes.

27.   (Original): The method according to claim 1, wherein said virtual interfaces are virtual drives.

28.   (Original): The method according to claim 1, wherein said virtual interfaces are virtual disk drives.

29.   (Original): The method according to claim 1, wherein said virtual interfaces are virtual tape drives.

30.   (Original): The method according to claim 1, wherein said virtual interfaces are a combination of different virtual interfaces.

31.   (Original): The method according to claim 30, wherein said virtual interfaces are virtual storage devices and virtual libraries.

32.   (Original): The method according to claim 1, wherein said physical devices are physical storage devices.

33.   (Original): The method according to claim 1, wherein said physical devices are physical disk drives.

34.   (Original): The method according to claim 1, wherein said physical devices are physical tape drives.

35.   (Currently amended): A data processing system for maintaining a database of usage information of a plurality of physical devices, comprising:

means for providing a virtualization system interposed between a host computer system and a plurality of physical devices, wherein said host computer system is capable of accessing virtual interfaces and is incapable of directly accessing any of said plurality of physical devices;

a database established within said virtualization system for storing information; [[and]]

means for storing, within said database, information about transactions processed by said virtualization system utilizing said plurality of physical devices[[.]]:

means for detecting an error in one of said plurality of physical devices occurring during processing of one of a plurality of transactions;

means for identifying said one of said plurality of physical devices having said error;

means for identifying said one of said plurality of transactions associated with said error; and

means for storing information about said error including said identification of said one of plurality of transactions and said identification of said one of said plurality of physical devices in said database.

36.   (Original): The system according to claim 35, further comprising means for accessing, utilizing said host computer system, said database.

37.   (Original): The system according to claim 36, further comprising means for utilizing said database by said host computer system to analyze performance of said plurality of physical devices.

38.   (Original): The system according claim 35, further comprising:
means for detecting an error in one of said plurality of physical devices; and
means for storing information about said error in said database.

39.   (Original): The system according to claim 35, further comprising means for
storing, within said database, information about a usage of each one of said plurality of
storage devices.

40.   (Original): The system according to claim 35, further comprising for each one of
said plurality of physical devices, means for maintaining a separate history within said
database of usage of each one of said plurality of storage devices.

41.   (Canceled)

42.   (Currently amended): The system according to claim 35 [[41]], further
comprising means for storing said information about said error in said database with an
entry associated with said one of said identified one of said plurality of physical devices.

43.   (Original): The system according to claim 35, further comprising:
       means for processing, within said virtualization system, a transaction between
said host computer system and a first virtual interface by translating said first virtual
interface to one of said plurality of physical devices associated with said first virtual
interface; and
       means for storing, in said database, information about said transaction.

44.   (Original): The system according to claim 43, further comprising:
       means for maintaining a separate history within said database of usage of each
one of said plurality of physical devices; and
       means for storing said information in a history associated with said one of said
plurality of physical devices.

45.   (Original): The system according to claim 43, further comprising means for
monitoring, utilizing said virtualization system, said transaction.

46.   (Original): The system according to claim 43, further comprising:

means for collecting, utilizing said virtualization system, an identification of said first virtual interface; and

means for storing said identification of said first virtual interface in said entry associated with said transaction.

47.   (Original): The system according to claim 43, further comprising:

means for collecting, utilizing said virtualization system, an identification of said one of said plurality of physical devices associated with said first virtual interface; and

means for storing said identification of said one of said plurality of physical devices in said entry associated with said transaction.

48.   (Original): The system according to claim 43, further comprising:

means for collecting, utilizing said virtualization system, an identification of a physical device utilized during said transaction; and

means for storing said identification of said physical device in said entry associated with said transaction.

49.   (Original): The system according to claim 48, wherein said means for collecting an identification of a physical device further comprises means for collecting an identification of a particular tape cartridge.

50.   (Original): The system according to claim 48, wherein said means for collecting an identification of a physical device further comprises means for collecting an identification of a particular hub.

51.   (Original): The system according to claim 48, wherein said means for collecting an identification of a physical device further comprises means for collecting an identification of a particular switch.

52.   (Original): The system according to claim 48, wherein said means for collecting an identification of a physical device further comprises means for collecting an identification of a particular tape drive.

53.   (Original): The system according to claim 43, further comprising:
means for collecting, utilizing said virtualization system, information about a data transfer executed during said transaction; and
means for storing said information about said data transfer in said database.

54.   (Original): The system according to claim 53, wherein said means for collecting information about a data transfer further comprises means for collecting information about a date of said data transfer.

55.   (Original): The system according to claim 53, wherein said means for collecting information about a data transfer further comprises means for collecting information about a time of day of said data transfer.

56.   (Original): The system according to claim 53, wherein said means for collecting information about a data transfer further comprises means for collecting information about a duration of said data transfer.

57.   (Original): The system according to claim 35, further comprising means for storing, within said database, information about errors in said plurality of physical devices occurring during said transactions.

58.   (Original): The system according to claim 35, wherein said virtual interfaces are virtual storage devices.

59.   (Original): The system according to claim 35, wherein said virtual interfaces are virtual libraries.

60.   (Original): The system according to claim 35, wherein said virtual interfaces are virtual volumes.

61.   (Original): The system according to claim 35, wherein said virtual interfaces are virtual drives.

62.   (Original): The system according to claim 35, wherein said virtual interfaces are virtual disk drives.

63.   (Original): The system according to claim 35, wherein said virtual interfaces are virtual tape drives.

64.   (Original): The system according to claim 35, wherein said virtual interfaces are a combination of different virtual interfaces.

65.   (Original): The system according to claim 64, wherein said virtual interfaces are virtual storage devices and virtual libraries.

66.   (Original): The system according to claim 35, wherein said physical devices are physical storage devices.

67.   (Original): The system according to claim 35, wherein said physical devices are physical disk drives.

68.   (Original): The system according to claim 35, wherein said physical devices are physical tape drives.

69.   (Currently amended): A computer program product for maintaining a database of usage information of a plurality of physical devices, said product comprising:
       instruction means for providing a virtualization system interposed between a host computer system and a plurality of physical devices, wherein said host computer system

is capable of accessing virtual interfaces and is incapable of directly accessing any of said plurality of physical devices;

instruction means for establishing a database within said virtualization system for storing information; [[and]]

instruction means for storing, within said database, information about transactions processed by said virtualization system utilizing said plurality of physical devices[[.]]:

instruction means for detecting an error in one of said plurality of physical devices occurring during processing of one of a plurality of transactions;

instruction means for identifying said one of said plurality of physical devices having said error;

instruction means for identifying said one of said plurality of transactions associated with said error; and

instruction means for storing information about said error including said identification of said one of plurality of transactions and said identification of said one of said plurality of physical devices in said database.

70. (Original): The product according to claim 69, further comprising instruction means for accessing, utilizing said host computer system, said database.

71. (Original): The product according to claim 70, further comprising instruction means for utilizing said database by said host computer system to analyze performance of said plurality of physical devices.

72. (Original): The product according claim 69, further comprising:

instruction means for detecting an error in one of said plurality of physical devices; and

instruction means for storing information about said error in said database.

73. (Original): The product according to claim 69, further comprising instruction means for storing, within said database, information about a usage of each one of said plurality of storage devices.

74.   (Original): The product according to claim 69, further comprising for each one of said plurality of physical devices, instruction means for maintaining a separate history within said database of usage of each one of said plurality of storage devices.

75.   (Canceled)

76.   (Currently amended): The product according to claim <u>69</u> [[75]], further comprising instruction means for storing said information about said error in said database with an entry associated with said one of said identified one of said plurality of physical devices.

77.   (Original): The product according to claim 69, further comprising:
        instruction means for processing, within said virtualization system, a transaction between said host computer system and a first virtual interface by translating said first virtual interface to one of said plurality of physical devices associated with said first virtual interface; and
        instruction means for storing, in said database, information about said transaction.

78.   (Original): The product according to claim 77, further comprising:
        instruction means for maintaining a separate history within said database of usage of each one of said plurality of physical devices; and
        instruction means for storing said information in a history associated with said one of said plurality of physical devices.

79.   (Original): The product according to claim 77, further comprising instruction means for monitoring, utilizing said virtualization system, said transaction.

80.   (Original): The product according to claim 77, further comprising:
        instruction means for collecting, utilizing said virtualization system, an identification of said first virtual interface; and

instruction means for storing said identification of said first virtual interface in said entry associated with said transaction.

81.   (Original): The product according to claim 77, further comprising:
        instruction means for collecting, utilizing said virtualization system, an identification of said one of said plurality of physical devices associated with said first virtual interface; and
        instruction means for storing said identification of said one of said plurality of physical devices in said entry associated with said transaction.

82.   (Original): The product according to claim 77, further comprising:
        instruction means for collecting, utilizing said virtualization system, an identification of a physical device utilized during said transaction; and
        instruction means for storing said identification of said physical device in said entry associated with said transaction.

83.   (Original): The product according to claim 82, wherein said instruction means for collecting an identification of a physical device further comprises instruction means for collecting an identification of a particular tape cartridge.

84.   (Original): The product according to claim 82, wherein said instruction means for collecting an identification of a physical device further comprises instruction means for collecting an identification of a particular hub.

85.   (Original): The product according to claim 82, wherein said instruction means for collecting an identification of a physical device further comprises instruction means for collecting an identification of a particular switch.

86.   (Original): The product according to claim 82, wherein said instruction means for collecting an identification of a physical device further comprises instruction means for collecting an identification of a particular tape drive.

87.   (Original): The system according to claim 77, further comprising:

instruction means for collecting, utilizing said virtualization system, information about a data transfer executed during said transaction; and

instruction means for storing said information about said data transfer in said database.

88.   (Original): The product according to claim 77, wherein said instruction means for collecting information about a data transfer further comprises instruction means for collecting information about a date of said data transfer.

89.   (Original): The product according to claim 77, wherein said instruction means for collecting information about a data transfer further comprises instruction means for collecting information about a time of day of said data transfer.

90.   (Original): The product according to claim 77, wherein said instruction means for collecting information about a data transfer further comprises instruction means for collecting information about a duration of said data transfer.

91.   (Original): The product according to claim 69, further comprising instruction means for storing, within said database, information about errors in said plurality of physical devices occurring during said transactions.

92.   (Original): The product according to claim 69, wherein said virtual interfaces are virtual storage devices.

93.   (Original): The product according to claim 69, wherein said virtual interfaces are virtual libraries.

94.   (Original): The product according to claim 69, wherein said virtual interfaces are virtual volumes.

95.   (Original): The product according to claim 69, wherein said virtual interfaces are virtual drives.

96.   (Original): The product according to claim 69, wherein said virtual interfaces are virtual disk drives.

97.   (Original): The product according to claim 69, wherein said virtual interfaces are virtual tape drives.

98.   (Original): The product according to claim 69, wherein said virtual interfaces are a combination of different virtual interfaces.

99.   (Original): The product according to claim 98, wherein said virtual interfaces are virtual storage devices and virtual libraries.

100.   (Original): The product according to claim 69, wherein said physical devices are physical storage devices.

101.   (Original): The product according to claim 69, wherein said physical devices are physical disk drives.

102.   (Original): The product according to claim 69, wherein said physical devices are physical tape drives.